Commodity Highlight: Avocados

United States Is World's Third Largest Avocado Producer

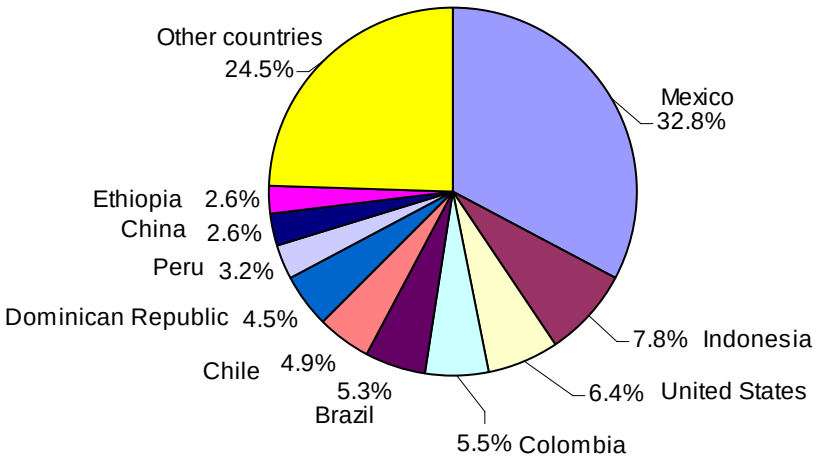
World avocado production has trended upward since the 1990s, reaching 3.2 million metric tons in 2005. Production increases since the late 1990s averaged 5 percent annually, up from 2 percent earlier in the decade. Larger gains in total harvested area—more than increases in yields—drove the growth in production that began in the late nineties.

Over 60 countries around the world produce avocados commercially. However, the top 10 avocado-producing countries supply 75 percent of the world's production (fig. 3). The United States ranks as the world's third-largest producer of avocados, with average annual production of about 193,000 metric tons, 6 percent of the world total. Aided by high yields and a large production area, Mexico is the number one producer, supplying over one-third of the world total. Indonesia has advanced to second place, surpassing Brazil and the Dominican Republic since the mid-1990s and the United States in more recent years. Production growth in Indonesia may be attributed to an almost triple expansion in harvested acreage between 1990 and 2004. Completing the top 10 producers are Brazil, Colombia, the Dominican Republic, Chile, Peru, Ethiopia, and China.

Fewer Farms and Less Acreage, but Domestic Avocado Production Increasing Slowly

The farm production structure for avocados in the United States appears to be shrinking. The Census of Agriculture reported that the total number of farms growing avocados in the United States has declined from 7,134 in 1997 to 6,251 in 2002. For the same period, the U.S. avocado industry also experienced a decline in total acreage, from 82,949 acres to 75,570 acres. Despite these declines, higher

Figure 3. World's leading avocado producers *



* Average share of 2003-2005 world production.

Source: Food and Agriculture Organization of the United Nations.

yields and more acres coming into production has helped increase U.S. avocado production by about 1 percent annually since 1997/98. Although weather factors and a 2-year productive cycle have caused swings in annual production, U.S. avocado growers produced an average of 199,440 short tons during 1997/98 to 2004/05. This is up from the average of 190,310 short tons produced from 1990/91 to 1996/97. The general upward trend in U.S. avocado production in the past decade and in recent years has been influenced by new varieties and improved production practices, including closer density plantings per acre, that have helped boost yields. Of the total avocado acreage reported in the Census of Agriculture in 2002, 88 percent generated commercial returns to avocado growers, while the remaining acres were still nonbearing. As these nonbearing acres become productive, the trend in production will likely continue upwards in the coming years.

More New Avocado Acreage in California Replacing Abandoned Acres

Based on the latest avocado acreage inventory summary from the California Avocado Commission (CAC), new avocado acreage in California increased sharply between 1997 and 2001. (Acreage is referred to as new when the area consists of replanted or newly planted trees that are less than 4 years old). CAC reported a total of 7,913 new acres in 2001, up from 990 acres reported from the previous survey in 1997. This new acreage is making up for the 3,568 acres of avocados reported abandoned as of 2001. While 64 percent of this abandoned acreage was in San Diego County, the number of new acres in the county, which totaled 2,517 acres, was higher than the 2,290 acres abandoned. This suggests continued higher production in the next few years, especially as these new plantings reach full production potential. Ventura County had the largest acreage of new plantings and replants, but it trails San Diego County in bearing acreage, accounting for 25 percent of total producing acres.

Avocado Orchards Are Mostly Small

A majority of the farms growing avocados in the United States are small operations. Approximately 83 percent of all the avocado orchards had less than 15 acres in production. Another 15 percent had between 15 acres and 99 acres in production. Only 2 percent of the orchards were considered large farm operations, with 100 or more acres. However, these big farms accounted for 37 percent of the production acreage. Farms with 1 to 14.9 acres in production accounted for 22 percent of total acreage, and farms with 25 to 99.9 acres accounted for 29 percent.

Most of Avocado Production Centered in California

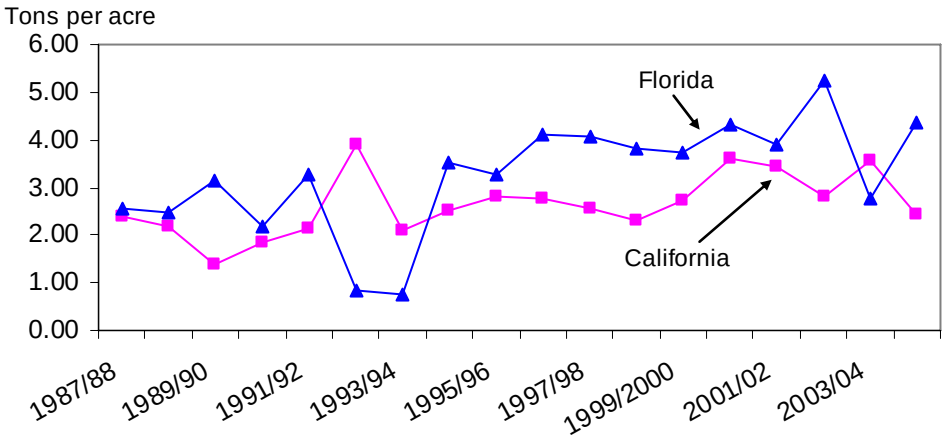
Because avocados grow only in tropical and subtropical climates, commercial production in the United States is limited mostly to California, Florida, and Hawaii. California is the dominant producer in the U.S. avocado industry. Nearly 5,000 of the farming operations that grew avocados in 2002 were in California, 839 were in Florida, 601 were in Hawaii, and 10 were in Texas. In terms of bearing acreage, California accounts for about 90 percent of the total, followed by Florida with 9

percent, based on annual statistics from the U.S. Department of Agriculture's National Agricultural Statistics Service (NASS). Production in Hawaii is very small, with bearing acreage and production volume averaging only a fraction of the industry total. There have been attempts to commercially produce avocados in the lower Rio Grande Valley of Texas, but such ventures have been restricted by winter freezes. Although not reported annually, avocado acreage in Texas, totaling 135 in 2002, was only about half the size of the acreage in Hawaii—also a small production area—based on data from the Census of Agriculture.

California avocado growers produce approximately 89 percent of the U.S. avocado crop each year. Since 2000/01, California's annual production has averaged 190,000 short tons, valued at over $330 million. In comparison, Florida's production equaled only about 13 percent of California's annual crop, averaging 25,000 tons from 2000/01 to 2004/05. While the avocado industry in Florida is small relative to California's, average yields per acre are higher (fig. 4). Florida avocados are generally bigger, increasing the weight of the fruit and boosting yields based on weight. Moreover, according to the California Avocado Commission, yields are generally lower in California because avocado trees, producing mostly the Hass variety, require a lot more energy to produce fruit with a higher oil content than the green-skinned varieties produced in Florida, and the desert conditions in the growing regions make it more challenging for pollination and fruit set.

In California, avocados are grown mostly in the southern coastal region, which includes San Diego, Ventura, Santa Barbara, and Riverside counties. The Census has shown large declines in avocado acreage in San Diego and Riverside between 1997 and 2002. Production is shifting to other areas such as Ventura and San Luis Obispo counties. Some of the factors driving these production shifts in Ventura County include lower water cost and growers planting avocado trees in place of Valencia orange trees due to poor returns on the Valencia oranges. In San Luis Obispo County, factors such as land and water availability and diversification of land used for grazing to more profitable ventures has boosted avocado production. Production acreages in both these counties have increased significantly between

Figure 4. Average yields of avocados in California and Florida



Source: National Agricultural Statistics Service, U.S. Department of Agriculture.

1997 and 2002. However, San Diego will likely continue to lead the State's avocado production in years to come as it still accounts for over 40 percent of total bearing acreage and 32 percent of new acreage.

In Florida, avocado production is centered mostly in Dade County, which houses 95 percent of the farms and 99 percent of the avocado acreage in the State. Avocado acreage was much larger in Florida prior to Hurricane Andrew in 1992. From 1987 to 1992, bearing acres in the State ranged from 8,000 acres to 12,000 acres, but with significant tree loss from the powerful winds of Andrew, about 3,000 acres were eliminated and very little has been replanted. In 2004/05, Florida had 6,400 acres of avocado trees of bearing age. Avocado production in Florida remains vulnerable to hurricane-related losses, such as those that occurred in 2005 from hurricanes Katrina, Rita, and Wilma.

Avocado Marketing Seasons Differ in California and Florida

U.S. consumers have access to avocado supplies year round. The harvest season in California usually runs from November through the following November; however, 75 percent of California's shipments take place between March and August. The long season is possible because avocados mature at different times depending on variety and the growing region's altitude and latitude. Also, avocados can remain on the tree for extended periods because they do not ripen until they are picked. The shipping season in Florida runs from June through February, but 90 percent of the shipments take place between July and December. California ships to much of the United States, including Florida and other States on the Eastern Seaboard. Florida sells primarily to Eastern U.S. markets.

Hass Variety Is Most Popular

At least two dozen varieties of avocados are grown commercially in the United States, but the Hass is the most widely available. It has thick, leathery skin that turns dark green-to-black as the fruit matures. It is known for its good eating quality, relatively high yields, and fairly dependable postharvest attributes. About 90 percent of California's avocado acreage is made up of the Hass variety. Bacon, Lamb-Hass, Fuerte, Zutano, Pinkerton, Gwen, and Reed are the other varieties grown in California. Bacon and Lamb each account for over 2 percent of production area, and Fuerte and Pinkerton for over 1 percent each.

The Lamb is a fairly new variety, released by the University of California. It was developed to overcome some negative characteristics of the Hass. It is Hass-like in appearance, but unlike the Hass, it produces medium- to large-size fruit, has better tolerance for extreme climatic conditions, is less sensitive to certain pests, and matures later than Hass, allowing the industry to extend the Hass season through December. The other varieties are green-skinned varieties (skin of the fruit remains green when mature).

Florida does not produce any Hass. Its production is comprised of several green-skinned varieties, including Booth, Lula, Taylor, Choquette, Hall, Monroe, Pollock, and Simmonds, among others. There are significant differences in size, texture, and

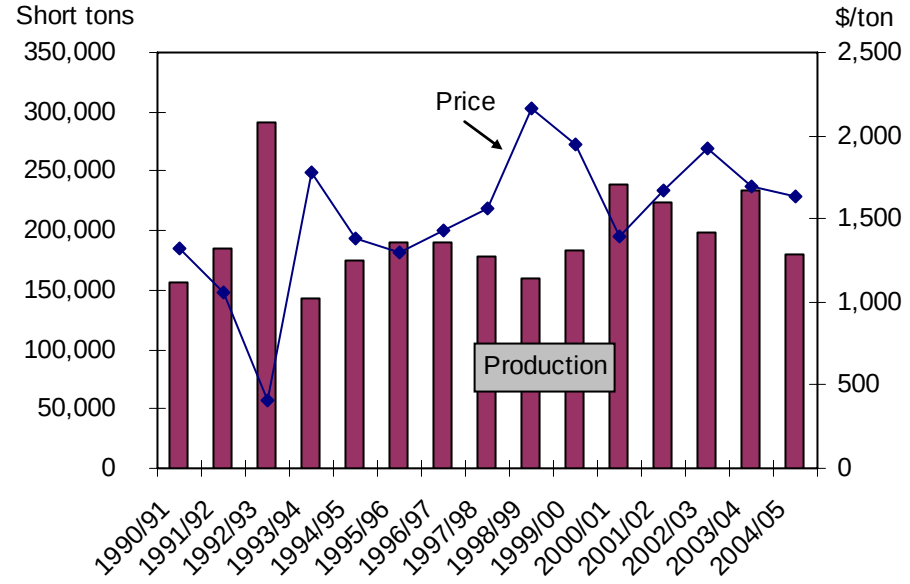
flavor between a Hass avocado and many of the green-skinned varieties. The Hass variety is small compared to many of the green-skinned varieties, weighing only a few ounces. Florida varieties are generally larger in size, some weighing as much as 3 pounds. Green-skinned varieties also have less fat but more moisture than the Hass, and thus are not as sweet and nutty tasting. Green-skinned varieties also tend to bruise more easily during shipment because of their thinner skin. Because they do not ship as well as the Hass, markets for Florida green-skinned varieties remain limited to the Eastern United States in the same way that California's green-skinned avocados remain in the West Coast market. For the Florida avocado industry, however, the predominance of the Hass also limits its opportunities to build new markets beyond its traditional outlets.

Avocado Prices Variable

Annual production swings, mostly due to weather factors and the cyclical nature of avocado trees, have resulted in year-to-year fluctuations in avocado grower prices in the United States. Prices generally declined in years with increased domestic production and rose in years with reduced production. Over the past decade, average U.S. grower prices only deviated from this inverse relationship between price and quantity produced during 1996/97 and 2004/05 (fig. 5). Because of California's large production share, fluctuations in U.S. average grower prices more closely mirror those in the State. Since the 1990s, season-average prices in California were mostly over $1,000 per ton, except in 1992/93, when record-large production drove prices down to $400 per ton. Record-high prices in the State were achieved in 1998/99, averaging $2,400 per ton, when production fell 12 percent to 136,000 tons, the second lowest output in the State over the last 16 years.

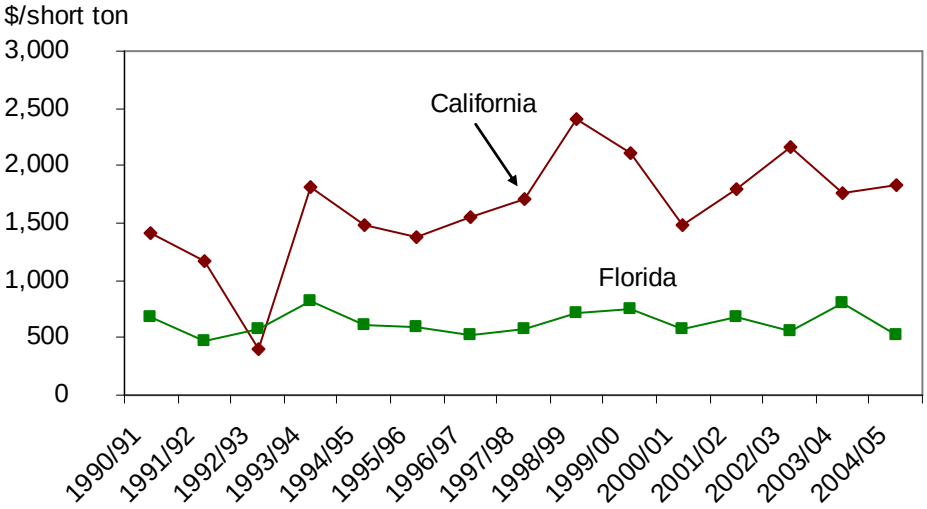
Average grower prices for green-skinned avocados in Florida are typically much lower than the prices growers receive for avocados in California (fig. 6). The season-average grower price for California avocados reported by the National Agricultural Statistics Service (NASS) mostly reflects prices for the Hass variety that constitutes most of State's production. Prices have differed between the two States by an average of about $1,200 per ton since the mid-1990s. Besides greater availability and better shipping quality, the Hass is more popular among retailers because it is not as perishable as the Florida green-skinned fruit. At maturity, the Hass has a shelf-life of about 28 days, while most green-skinned avocados in Florida have a shelf-life of about 7 days. This is perhaps part of the reason retailers are willing to pay more for the Hass and why we often see green-skinned varieties cheaper than the Hass at grocery stores.

Figure 5. U.S. avocado production and season-average grower price



Source: National Agricultural Statistics Service, U.S. Department of Agriculture.

Figure 6. Season-average grower prices for avocados in California and Florida

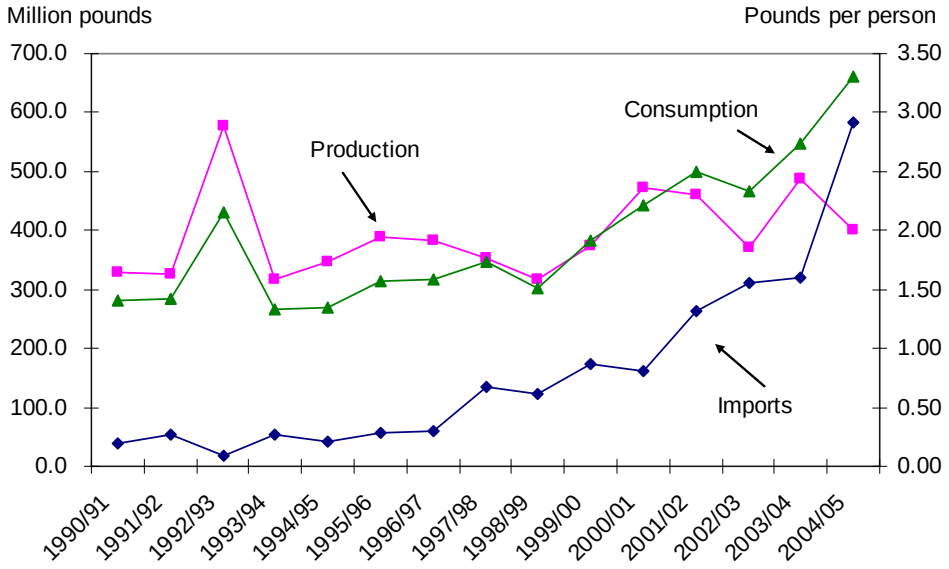


Source: National Agricultural Statistics Service, U.S. Department of Agriculture.

Domestic Demand for Avocados on the Rise

The growth in U.S. avocado consumption has been robust, increasing by more than 50 percent from an average of 1.6 pounds per person during the 1990s to an average of 2.6 pounds per person in the last 5 marketing years (fig. 7). Per capita consumption of avocados has increased 7.2 percent annually since 1990, far exceeding average consumption growth rates for leading fresh fruits, including oranges, apples, bananas, grapes, pineapples, and strawberries. Although avocado

Figure 7. Domestic fresh avocado supply and consumption



Source: National Agricultural Statistics Service and Economic Research Service, U.S. Department of Agriculture; Bureau of the Census, U.S. Department of Commerce.

consumption rose at a slower pace than consumption of fresh blueberries, cherries, cranberries, papayas, and mangos, U.S. consumers consumed more avocados than any of these commodities annually on a per capita basis.

Increased demand for avocados in the United States may be attributed to the country's large and growing Hispanic population and heightened interest in ethnic and health-promoting food in general, as well as to aggressive marketing and promotional efforts, specifically by the California avocado industry, to educate traditional American consumers about the fruit and its nutritional attributes. Avocados are popular among the Hispanic population because they are a traditional ingredient in Mexican and Caribbean food. In the United States, avocados are mostly consumed fresh in salads, as a side dish, or as guacamole.

The largest market for avocados in the United States is the West Coast, particularly California, where over one-third of the U.S. Hispanic population resides. Most of the avocados sold in California are Hass. Texas is also a large market because it has the second-largest Hispanic population. Consumers in markets west of Mississippi, and all those with Mexican and other Hispanic origins, have a strong preference for Hass over other varieties because this is what they have been accustomed to. Markets on the East Coast have large populations of Caribbean immigrants who prefer the green-skinned varieties. Nevertheless, the Hass variety is still widely available in these markets, with California and imports, mainly from Mexico and Chile, supplying them. Because Hass avocados are the most widely available, retail and food service markets prefer them for consistency. Also, Hass is the variety most heavily promoted by the industry, targeting traditional Hass consumers as well as those unfamiliar with avocados.

Avocado Imports Capturing a Growing Share of Domestic Consumption

While remaining relatively flat in the early 1980s, U.S. avocado imports began to trend upwards later in the decade and into the 1990s and in recent years. From an average of about 4 million pounds of imports in the early 1980s, imports rose to over 100 million pounds in 1997/98 and continued to increase more sharply in succeeding marketing years, to an all-time high of 583 million pounds in 2004/05.

With a growing market for avocados in the United States, imports have played an increasing role in fulfilling domestic demand. Imports as a share of domestic consumption rose from less than 1 percent in the early 1980s to an average of over 40 percent from 2000/01 to 2004/05, with some years posting much higher shares. For example, the California crop was smaller than for the previous 5 years in 2004/05, the same time that imports were at a record high. This marked the first year that imports exceeded domestic production, with imports accounting for over 60 percent of the supplies available to U.S. consumers. Most of the growth in imports in 2004/05 was from Mexico as it gained expanded access to the U.S. avocado market.

Avocados are imported into the United States throughout the year, but over three-quarters of annual import volume occurs during September to January, based on monthly import data from the U.S. Department of Commerce's Bureau of the Census. Nearly all of the fresh avocados imported into the United States each year come from Chile (which averaged 62 percent of total during 2002-2005), Mexico (27 percent), and the Dominican Republic (10 percent). Small quantities also arrive each year from the Bahamas and New Zealand and occasionally from other Latin American countries. Both Chile and Mexico ship Hass avocados. Imports from the Dominican Republic, meanwhile, are similar to some of Florida's green-skinned varieties.

Chile has long been the United States' leading source of imported avocados, but Mexico took over this role in 2005 when its shipments to the U.S. market rose 247 percent, accounting for a 51-percent share of total imports. The sharp rise in shipments from Mexico was greatly influenced by a USDA ruling in December 2004, allowing Mexico to expand its distribution in the United States to 47 of the 50 U.S. States (except California, Florida, and Hawaii) on a year-round basis. Phystosanitary reasons prevented entry of Mexican avocados into the United States for many years, but continuing strides by the Mexican government toward expanded access in the U.S. market slowly but surely were successful. Imports from Mexico have risen from over 1.0 million pounds in 1993/94 to 296.1 million pounds in 2004/05.

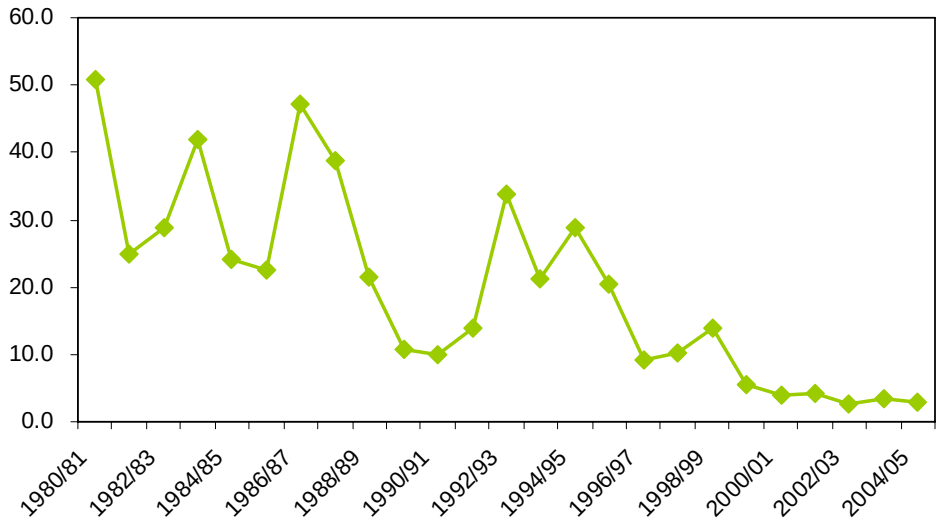
Avocado Exports Are a Small and Shrinking Market

Export markets appear to be a shrinking outlet for U.S. avocados as rapidly expanding demand in the domestic market absorbs much of what is produced here. Since the 1990s, domestic production has been growing at an average rate of 7 percent annually, while per capita consumption has been increasing at 10 percent. U.S. avocado exports have been on a downward trend, declining from 51 million

pounds in 1980/81 to 10 million in 1990/91, and to 3 million in 2004/05 (fig. 8). Imports of avocados in the United States well exceed exports, and although important, exports account for less than 1 percent of domestic production. This share is down from an average of 7 percent in the early- to mid-1980s and from about 6 percent during the first half of the 1990s. There is, however, more incentive now for the U.S. avocado industry to seek further opportunities in export markets as it continues to loose a share of the domestic market to imports. There are about 17 countries serving as markets for U.S. avocados; however, over 80 percent of the exports go to Canada, Japan, and South Korea.

Figure 8. U.S. avocado exports from 1980/81 to 2004/05

Million pounds



Source: Bureau of the Census, U.S. Department of Commerce.

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